SCA CHEMICAL SERVICES, INC.

AN SCA SERVICES COMPANY

11700 S. Stony Island Avenue
Chicago, Illinois 60617
(312) 646-5700

SCA
CHEMICAL
SERVICES

July 27, 1983

Mr. Howard Chinn
Chief Engineer
Environmental Control Division
State of Illinois
Attorney General's Office
160 North LaSalle Street
Chicago, Illinois   60601

Subject: Disposal of "Cyanide Chips"

Dear Mr. Chinn:

Per your recent discussion with SCA's George Kush, Director
of Environmental Affairs, I am forwarding Laboratory Data
covering recent thermal destruction of a cyanide bearing waste
at SCA's South Chicago incinerator. We routinely destruct various
cyanide contaminated sludges such as TDI (Toluene Di Isocyanate)
in our kiln at 1600° to 1800°F and cyanide contaminated liquids
in our secondary combustion chamber at temperatures in excess of
2000°F.

Since the cyanide complex totally breaks down at temperatures
in excess of 1000°F, there is absolutely no possibility of cyanide
emissions from our operations. However, as substantiation of
this, we submit the attached analysis of our scrubbing tower water
following destruction of a recent cyanide bearing waste with
concentration far in excess of that present in the cyanide chips.
Dr. Richard Carnes, Director of the USEPA Research Facility at
Pine Bluff, Arkansas would also be happy to confirm that cyanide
bearing waste can be efficiently and totally disposed of via
thermal destruction in a high technology incinerator.

We feel that SCA can offer the most environmentally secure
method of disposal at economics comparable to current alternatives.
Disposal price for the "chips" would be $0.10/lb. packaged in
incinerable containers. If repacking at our plant is required,
our price would be $0.12/lb.

As a full service company with expertise in all phases of
Hazardous Waste Disposal, SCA would be happy to inspect the
locations where the remaining cyanide chips are stored and provide
consultation on the most appropriate means of transferring to
our incinerator. Also, we would like to extend an invitation to
you and any other member of the Attorney General's staff to inspect
our Facility.

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    If you have any questions on the above, please feel free
to contact me at 11700 South Stony Island Avenue, Chicago,
Illinois or phone (312) 646-5700.

                              Sincerely,

                              Clark J. Rose
                              Vice President

CJR/dc

attachment

SCA CHEMICAL SERVICES, INC.
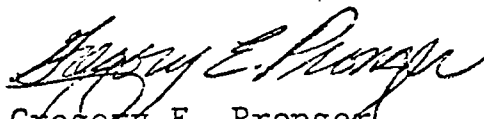
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<u>Cyanide Test Burn</u>   July 26, 1983

On July 8, 1983 and July 9, 1983, a waste stream found
to contain 2.13% total cyanide was incinerated. Water samples
of the MSD discharge, prescrubber and retention tank and air
sampling of the retention tank vent was performed by operations
personnel during the incineration.

Analysis of samples by the laboratory showed no abnormal
cyanide concentrations in the incinerator process.

Please find attached copies of the laboratory data.

Gregory E. Pronger
Laboratory Manager

GEP/dc

cc: Clark Rose
    John Valerius
    Alicia Whatley
    George Kush
    Dick Moon
    Ken Anderson
    Gerry Piper

attachments

Cyanide 7/8/83

Time	MSD (PPM)	RTK (PPM)	PRE (PPM)
9:00 PM	<0.2	<0.02	<0.02
9:30 PM	<0.2	<0.02	<0.02
10:00 PM	<0.2	<0.02	<0.02
10:30 PM	<0.2	<0.02	<0.02
11:00 PM	<0.2	<0.02	<0.02
11:30 PM	<0.2	<0.02	<0.02
12:00 AM	<0.2	<0.02	<0.02
12:30 AM	<0.2	<0.02	<0.02
1:00 AM	<0.2	<0.02	<0.02
1:30 AM	<0.2	<0.02	<0.02
2:00 AM	<0.2	<0.02	<0.02

Bubbler	CN (PPM)
#1	<0.2
#2	<0.2
#3	<0.2

Sample of Waste Incinerated - Total 2.13% cyanide

Flow rate on vacuum pump

   7.5 sec./100ml

$$\frac{100ml}{7.5\ sec./60\ sec./min.} = 800ml/min. = 0.8\ liters/min.$$

Molar volume of Ideal Gas

   $V_m = RTO/PO$ $R = 8.206 \times 10^{-2}\ m^3\ atm\ mole^{-1}\ k^{-1}$

   $TO = 302^{\circ}k\ (85^{\circ}F)$

   $PO = 1\ atm$

$$V_m = \frac{8.206 \times 10^{-6}\ (302)}{1} = 24.8\ \frac{liters}{mole}$$

Molar weight of air $\equiv$ 28.9g/mole

Weight of air through pump $= \dfrac{28.9g/mole}{24.8\ liter/mole} \times 0.8\ liter/min. =$
                                                      0.93g/min.

Cyanide in air first scrubber:

pump run 79 minutes

79 minutes x 0.93g/min. = 73g air

<0.1PPM CN$^-$

$<0.1 \text{ mg/l} \times 100\text{ml} \times \dfrac{1L}{1000\text{ml}} \times \dfrac{1000\text{ug}}{\text{mg}} = <10\text{ug CN}^-$

$\dfrac{<10\text{ug CN}^-}{73\text{g air}} = <0.14\text{PPM CN}^- \text{ in air}$